



Time for this unit: 4 weeks (5 lessons per week. 50 mins/lesson)

Weeks	Topic	General Aims By the end of this unit students should be able to:	Specific VSA Learning Objectives By the end of this unit students should know/be able to:	Main Resource(s)
29 to 32	Trigonometry	<ul style="list-style-type: none"> <li>➤ Appreciate that mathematical proof is more rigorous than other types</li> <li>➤ Appreciate that there are many ways of proving something in Maths</li> <li>➤ Appreciate that some proofs rely on axiomatic knowledge</li> <li>➤ Understand that trigonometry can be used in all triangles</li> <li>➤ Appreciate the applications of trigonometry</li> <li>➤ Link trigonometry to work covered in algebra</li> </ul>	<ul style="list-style-type: none"> <li>➤ Vocabulary: show, prove, verify, justify, check</li> <li>➤ Understand that “proof that a statement is true” is the same as “proof that a statement is always true”.               <ul style="list-style-type: none"> <li>- numerous verifying examples does not constitute a proof</li> <li>- a counterexample is sufficient to disprove a conjecture</li> </ul> </li> <li>➤ Use simple diagrams as aids to “proof without words” (visual thinking)</li> <li>➤ Use previous results (as axioms) to prove given identities (in trigonometry, algebra and geometry)</li> <li>➤ Use algebraic manipulation in proof</li> <li>➤ Solve right triangles using simple trig ratios</li> <li>➤ Recall trig ratios for “special” angles – <math>0^\circ</math>, <math>30^\circ</math>, <math>45^\circ</math>, <math>60^\circ</math> and <math>90^\circ</math></li> <li>➤ Solve problems which include angles of depression/elevation and 3-figure bearings</li> <li>➤ Link Pythagoras’ Theorem to simple triangles</li> <li>➤ Select and apply the Sine Rule</li> <li>➤ Select and apply the Cosine Rule</li> <li>➤ Use Area = <math>\frac{1}{2}ab\sin x</math> for a triangle</li> <li>➤ Graph <math>y = \sin x</math>, <math>y = \cos x</math> and <math>y = \tan x</math> for <math>0^\circ \leq x \leq 360^\circ</math></li> <li>➤ Appreciate that <math>\tan x = \sin x / \cos x</math></li> <li>➤ Appreciate and use the fact that <math>\sin(90^\circ - x) = \cos x</math></li> </ul>	New Trend Mathematics 5A (Ch1/2)  New Trend Mathematics 6 (Ch3)  New Trend Mathematics (Teachers CD + DVD)
				<div>Support Resources</div>
				Various worksheets  Mathletics

Guiding Question	Main Areas of Interaction Focus	Learner Profile
<b><i>How do we get around?</i></b>	Human Ingenuity -- Several of the proofs are testament to “genius” eg. Euclid’s proof of the infinitude of Primes – how trigonometry represents the intersection of algebra and geometry and can be used to solve many problems related to space, as well as many periodically-occurring phenomena ATL – Our approach to proof as a mirror to our approach to learning!	Inquirers – Students explore the meaning of trig ratios of angles bigger than $90^0$ Knowledgeable – Students are able to apply knowledge in geometry and algebra using trigonometry
	<b>Technology</b>	<b>Assessment</b>
	➤ Use of spreadsheets ➤ Use of Geogebra to graph trig functions ➤ Use GDC to graph trig functions - CT	A written test (Criteria A and B)
	<b>Embedded Enquiry</b>	<b>Cross-curricular Links</b>
	Hands-on experience with Geogebra Programme – also using geometrical instruments (including a clinometers) to measure the height of a building.	Periodic phenomena in science – tides, simple harmonic motion
<b>ATL</b>	Students to independently construct various plans of attack to tackle a problem. Also – touching on the notion of proof	